Topical review: Task shifting and the recruitment and retention of eye health workers in underserved areas

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SIGNIFICANCE: Many populations experience difficulty accessing eye care, especially in rural areas. Implementing workforce recruitment and retention strategies, as well as task shifting through widening scope of practice, can improve eye care accessibility. This article provides novel evidence on the compatibility of these strategies aimed at enhancing ophthalmic workforce recruitment, retention, and efficacy.

PURPOSE: The global burden of blindness is unequally distributed, affects rural areas more, and is frequently associated with limited access to eye care. The World Health Organization has specified both task shifting and increasing human resources for eye health as instruments to improve access to eye care in underserved areas. However, it is uncertain whether these two instruments are sufficiently compatible to provide positive synergic effects. To address this uncertainty, we conducted a structured literature review and synthesized relevant evidence relating to task shifting, workforce recruitment, retention, and eye care. Twenty-three studies from across the globe were analyzed and grouped into three categories: studies exploring recruitment and retention in human resources for eye health in general, studies discussing the relationship between task shifting and recruitment or retention of health workers in general, and studies specifically discussing task shifting and recruitment or retention in eye care workers.

FINDINGS: Our findings demonstrate that incentives are effective for initiating task shifting and improving recruitment and retention in rural areas with a stronger effect noted in midlevel eye care professionals and trainees. Incentives can take various forms, e.g., financial and nonfinancial. The consideration of context-specific motivational factors is essential when designing strategies to facilitate task shifting and to improve recruitment and retention.

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The prevalence of blindness worldwide was estimated to be 43.3 million people in 2020 according to the Lancet Global Health Commission; a further 553 million people were estimated to be visually impaired.[1] Blindness has an impact on individual health status and quality of life[1–3] and individual and national economy.[3–5] It puts strain on health care resources in both high- and low-income countries.[6] Overall prevalence in visual impairment is decreasing,[7] partly thanks to a global initiative launched in 1999 called "Vision 2020: The Right to Sight."[8]

The Vision 2020 campaign highlighted the challenge of inequality in coverage and uneven quality of care and set out several strategic goals including the development of Human Resources for Health (HRH).[9] Human Resources for Health involves the knowledge, skills, recruitment, motivation, and deployment of appropriate people to organize and deliver health services to suit a country's health needs.[10] This is especially challenging in low-income countries where chronic underinvestment in HRH, compounded by the fact that training does not necessarily address demand, means that there is difficulty in deploying staff, especially to rural, remote, and underserved areas,[11] but higher-income countries also suffer from this problem, especially in rural areas.[12] Targeting HRH development is a key element in improving access to health care,[12] and the World Health Organization has suggested two main foci of efforts: recruitment and retention strategies,[11] and task shifting.[13]

Task shifting has been shown to improve access to health care and equity in delivery.[14] Where there is low HRH, health workers taking on responsibilities not traditionally within their role allows people greater access to services. Successful task shifting not only increases the numbers of professionals but also mitigates dependence on comparatively few highly skilled and expensive staff.[15] Task shifting has been shown to be effective in a wide variety of health areas including primary care,[16] anesthesia,[17] and psychiatry.[18] In eye care, task shifting often refers to optometrists or ophthalmic nurses taking on roles traditionally carried out by ophthalmologists. The variety of professionals involved, variation in tasks carried out, and variation in nomenclature make the issue complex and collecting reliable data difficult.[18,19] Task shifting occurs in many countries within eye care including therapeutic prescribing,[20] glaucoma treatment,[21] and cataract assessment.[22]

The recruitment and retention of optometrists can be challenging.[23–27] In 2016, the World Health Organization produced strategic guidelines for all countries to achieve improvement in human resources for eye health that included optimizing health worker motivation, satisfaction, and retention, as well as equitable distribution and equitable performance.[11] Recruitment is the ability to offer attractive, adequately remunerated, consistent work and to place health workers into those positions. It can involve incentives to work in areas viewed as less attractive that may be monetary or nonmonetary, like accommodation or opportunities for further study. Retention is the ability to keep these workers in their positions by optimizing their satisfaction and engagement in their roles. It is therefore the recruitment and retention of eye care workers that will improve human resources for eye health and subsequently improve access to eye care. However, it is unknown whether improving the recruitment and retention of the eye care workforce is compatible with efforts to promote task shifting. This study aimed to assess and critically appraise the literature on the relationship between task shifting and recruitment and retention of the eye care workforce. A further aim was to assess whether factors promoting human resources for eye health and factors improving the effectiveness of task shifting have the potential to be complementary in order to ultimately improve access to eye care.

METHODS

A structured literature review was conducted using three areas of interest: task shifting (1), recruitment or retention (2), and

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TABLE 1. Search terms used for each area of interest

Topic	Search terms used
Task shifting	Task shift* OR shifting task OR task sharing OR sharing tasks OR task transfer OR task delegation OR optometrist provided treatment OR nurse provided treatment OR substitute health* worker NOT grader
Retention and/or recruitment	Recruit* OR retention OR retain OR personnel OR employ* OR career OR retirement OR attrition OR labor market
Human resources for eye health	Optometr* OR ophthalm* OR orthopti* OR optician OR eyecare OR eye nurse OR eye* worker

human resources for eye health (3). Exploratory searches were run to identify synonyms or potentially problematic terms until final search terms were reached (Table 1). Searches were run in combinations on different search platforms (Fig. 1). Inclusion criteria were studies from peer-reviewed journals, published in English since 2005 and where the full text was available. Taking a global perspective in our search, we considered studies from any country. Results were reviewed by title, then abstract, and then by full text to assess relevance. An extraction table was created (Appendix Table A1, available at http://links.lww.com/OPX/A717), and a reduced version was used to summarize findings (Table 2).

RESULTS

Twenty-three studies from a wide range of countries including high-income and low- and middle-income countries were included in the review (Fig. 2). The studies were grouped into three categories: studies exploring recruitment and retention in human resources for eye health in general, studies considering the relationship between task shifting and recruitment or retention of health workers in general, and studies assessing task shifting and recruitment or retention in eye care workers.

Recruitment and retention in human resources for eye health

Six studies focused on recruitment and retention of eye care workers. Most were in the context of the aspirations of optometry students[23–26] but also included motivation and satisfaction of current optometrists.[27,42] Although these findings are not specific to task shifting, the results can help understand the general motivation of optometrists. In one study, student optometrists in Ghana, asked

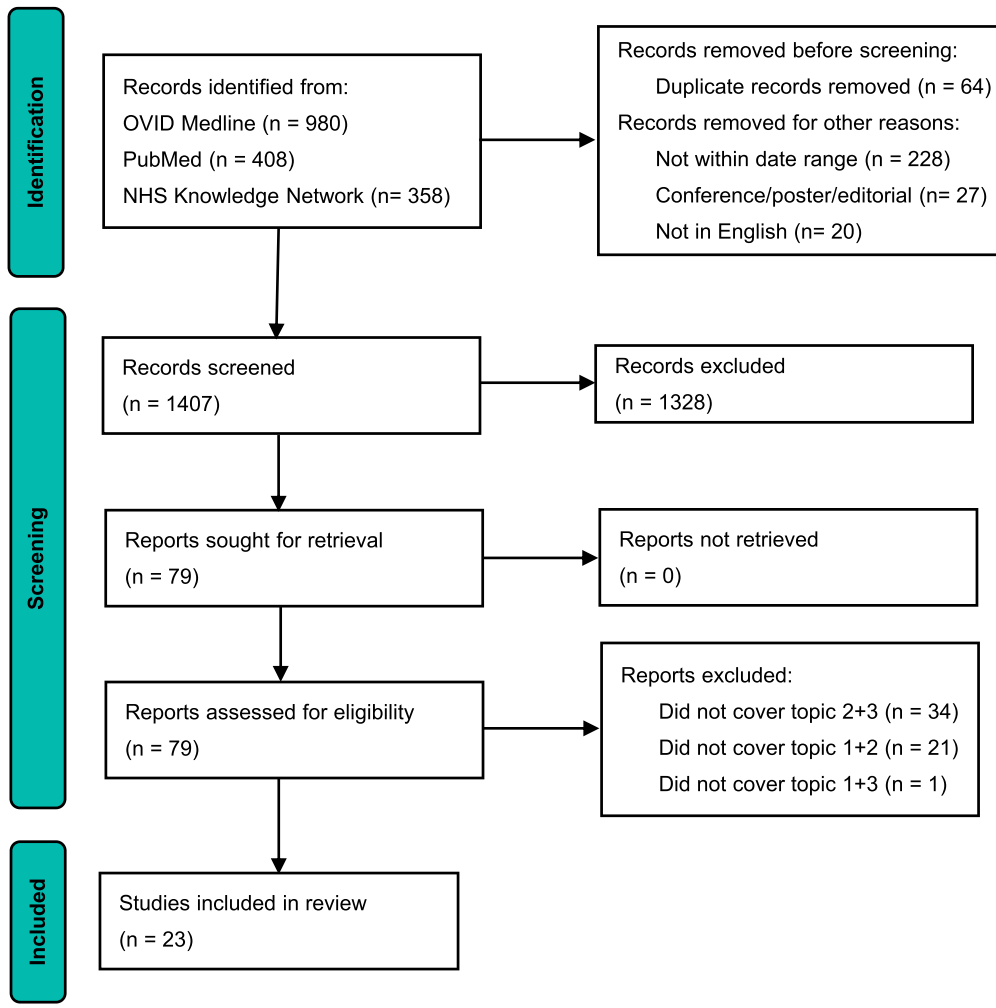

FIGURE 1. Preferred reporting items for systematic reviews and meta-analyses (PRISMA) flowchart of literature search.

TABLE 2. Reduced extraction table showing results of literature review (see Appendix Table A1, available at http://links.lww.com/OPX/A717, for full extraction table)

Author and year	Study type	Cadre	Task shifting (1)	Retention/ recruitment (2)	HReH (3)	Location	Ref. quality
Akuffo et al. (2021)[27]	Questionnaire	Optometrists (214)		x	x	Ghana	**
Atakro (2017)[28]	Semistructured qualitative interviews	Nurses (30)	x	x		Ghana	**
Bergström (2015)[29]	Review	Obstetric care	x	x		Various low income	*
Boadi-Kusi et al. (2018)[23]	Cross-sectional survey	Optometry students (333)		x	x	Ghana	*
Bolme et al (2021)[30]	Individual and group interviews	Ophthalmic nurses (12)	x	x	x	Norway	*
Bruce and Tatham (2018)[31]	Online survey	Optometrists (299)	x		x	Scotland	*
Courtright et al. (2016)[32]	Review/discussion	Eye care workers	x		x	Sub-Saharan Africa	*
du Toit et al. (2011)[33]	Semistructured interviews	Ophthalmic nurses (30)	x	x	x	Western Pacific	**
Eliah et al. (2014)[34]	Survey	Nonphysician cataract surgeons (116)	x	x	x	Kenya, Tanzania, Malawi	*
George et al. (2019)[35]	Survey	Optometrists (230)	x	x	x	Singapore	*
Gichangi et al. (2015)[36]	Survey	Nonphysician trichiasis surgeons (169)	x		x	Kenya, Tanzania, Malawi	*
Goma et al. (2014)[37]	Cross-sectional quantitative and qualitative	Health workers (45)	x	x		Zambia	**
Joshi et al. (2018)[38]	Review	Nurses and nonphysician heath workers	x	x		9 Countries	**
Kobia-Acquah et al. (2020)[24]	Cross-sectional survey	Optometry students (209)		x	x	Ghana	*
Lewallen et al. (2012)[39]	Cross-sectional questionnaire	Nonphysician cataract surgeons (31)	x	x	x	Sub-Saharan Africa	***
Mashige et al. (2015)[25]	Cross-sectional questionnaire	Optometry students (438)		x	x	South Africa	*
Okyere et al. (2017)[40]	Qualitative interviews	Health workers and management (68)	x	x		Ghana	**
Osuagwu et al. (2014)[26]		Optometry students (247)		x	x	Saudi Arabia	*
Pente et al. (2021)[41]	Qualitative interviews	Ophthalmic community health officers (42)	x	x	x	Sierra Leone	**
Ramson et al. (2016)[42]	Cross-sectional survey	Optometrists (41)		x	x	South Africa	
Rosskam et al. (2012)[43]	Case study review	Midwives	x	x		Bangladesh, Sri Lanka, and Nigeria	**
Shah et al. (2018)[44]	Qualitative interviews	Doctors, optometrists, and technicians (22)	x		x	Pakistan	*
Shah et al. (2019)[45]	Qualitative survey	Hospital administrators (4)	x		x	Pakistan	*

Asterisks denote reference quality score out of three stars.
HReH, Human Resources for eye Health.

specifically to consider rural working, reported being motivated by opportunities that provided good remuneration, further study scholarships, adequate living conditions, and clear career progression.[23] A further study[24] found Ghanaian optometry students were attracted to their career by the prospect of adequate income and good work-life balance but also reported that their main aspiration was to be involved in clinical work. A study of qualified optometrists in Ghana confirmed the findings that the most important motivational factors in their career were good work-life balance and acceptable remuneration alongside adequate supervision and opportunities for continuing education.[27] In comparison, a study in South Africa reported similar motivational considerations among optometry students for location of future practice: pay, working conditions, access to scholarships, and a clear career pathway.[25] Again, qualified optometrists in South Africa stated that job security and work-life balance were important for recruitment but specified that a salary comparable with other health professionals was what affected retention.[42] In Saudi Arabia, a high-income country, optometry students were mainly motivated by a desire to help others and the prestige gained from the title of "doctor." These general motivations of optometry students and optometrists are important considerations when planning task shifting and may suggest that different motivations occur in different contexts. However, the results of these quantitative studies, which covered three countries, were limited by variable and sometimes low response rates, thus limiting the depth of exploration of the phenomenon of motivation.

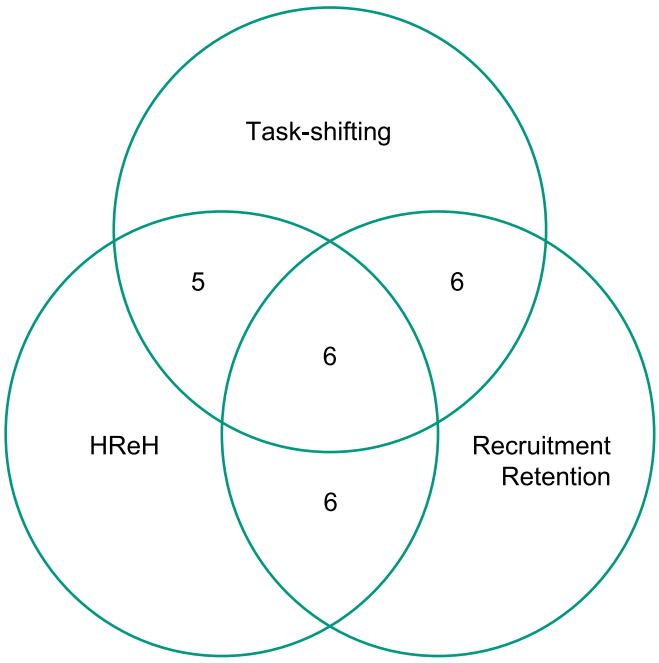

FIGURE 2. Venn diagram showing number of search results according to areas of interest.

Task shifting and recruitment or retention of health workers

Six studies commented on the link between task shifting and recruitment or retention of health workers.[28,29,37,38,40,43] Atakro[28] conducted a study among emergency care nurses in rural and urban areas of Ghana and found that undertaking task shifting had a significant impact on the retention of nurses, thus demonstrating that task shifting can be an effective retention strategy. Nonetheless, task shifting also led to higher levels of anxiety and stress at work and was attributed to inadequate training and the inability to treat conditions encountered. Rural nurses especially were often faced with, and took on, tasks that were outside their remit mainly because of the lack of availability of appropriately qualified colleagues. Their stress levels were exacerbated by the inability to prescribe necessary medication. Other studies among nurses showed that both the inability to prescribe medication and having access to an adequate supply of appropriate medication were major factors affecting the retention of health workers in task shifting programs,[38,46–49] as it led to pressure to treat conditions outside practitioners' legal scope of practice or level of training. Agyapong et al.[50] recommended that, in this situation, training should increase to cover the actual demands of the task-shifted role, rather than restricting tasks according to job title.

In the study by Atakro,[28] rural nurses felt the pressure of task shifting more keenly but also described more support from management than urban nurses: an important motivating factor in their task shifting role. Other studies also found good communication with colleagues and management, and support from supervision to be factors in the success of task shifting, being motivational when present[36,43,49,50] and a barrier when absent.[31,51] Again, the sense of being fully equipped to undertake the task in hand led to greater satisfaction at work. However, some studies noted that the extra human resources required caused resistance among those needed to provide this support in addition to managing their busy workload, a phenomenon also found in eye care in other countries.[31,44,52] Bolkan et al.[53] found that acceptance of the task-shifted role from those providing support was essential to a successful task-shifted program.

Rosskam et al.,[43] in their study on midwives, noted that, if government policy promotes enablers like financial incentives, HRH in task-shifted programs can increase. Poor remuneration is often quoted as a barrier to recruitment[16,33,47] and retention[23,33,43,47,53] in task shifting and has also been demonstrated as a barrier to optometrists undertaking task-shifted services in the United Kingdom,[31,54] Singapore,[35] and Australia.[55] Financial incentives and monetary scholarships have also been shown to be high predictors of retention in health workers.[38,56] However, Joshi et al.[38] and Rosskam et al.[43] advise that financial incentives alone are not enough, and nonfinancial incentives are necessary to maintain motivation. Studies from many countries have shown health care workers are motivated by a much wider and more complex set of factors than simply remuneration.[57,58] Intrinsic motivation, such as personal development or helping others, is important to the health care workforce, and there is evidence that health care workers consider extrinsic motivators such as remuneration of lesser importance provided that a basic sufficient salary is in place.[53,59]

It is important to note that the recruitment and retention of health workers specifically in underserved areas are crucial to increasing access to health care for those most in need. It is therefore important to ascertain whether task shifting, and recruitment and retention strategies are compatible and effective specifically in rural and underserved areas. Bergström[29] reviewed the role of midlevel providers in obstetric care in low-income countries and concluded that not only was surgical task shifting medically effective and cost-effective but also that nonphysician surgeons had higher retention rates in rural areas than physicians. In Mozambique, 90% of nonphysician surgeons in rural areas remained in post compared with zero physicians in one study.[60] The reason may be that health workers from rural areas were more likely to work in rural areas, an idea corroborated by Abelsen et al.[61] Incentivizing students from rural areas or exposing students to rural placements can be effective in long-term recruitment.[61–63] However, there is evidence in many low-income African countries that trainees originating from rural areas used the training as an escape route out of rural life.[39] In one study in Mozambique, undertaking task shifting reduced rural retention of obstetric workers, as once these health workers received more training, they were more likely to move to an urban area.[60] In a study on remote regions in Northern Europe and North America, hiring local workers was effective, but making provision for their spouses and families and providing incentives improved recruitment and retention.[61] Family considerations such as living conditions, jobs for spouses, and schooling were found to be the biggest predictors of retention among health workers in Zambia.[37] It is the location and the task therefore that must be attractive in order for task shifting to be effective in the areas that need it most.

Task shifting and the recruitment or retention of eye health workers

Eleven studies were related to task shifting and recruitment or retention of eye health workers. None of the studies specifically measured or explored this relationship, but all made comments applicable to this phenomenon. A series of studies by Shah et al.[44,45,64,65] analyzed at the success of a task shifting program in Pakistan in diabetic eye care. Ophthalmologists recognized that "task sharing" was needed and feasible and could extend eye care much further into the community (thus improving access and availability) and were overall positive,[64] stating that optometrists were

capable of undertaking most tasks needed.[65] However, resistance from ophthalmologists also existed,[44] a phenomenon that has been reported elsewhere.[31,66,67] Hospital managers were also positive about the potential for "task sharing," being aware that it had reduced operating costs and increased coverage in other countries but citing practical issues including the distribution of the eye care workforce as the main barrier to implementation.

The productivity, efficiency, quality of care, and overall impact on the health service of nonphysician surgeons in eye care have been studied.[32,36,39] Nonphysician cataract surgeons exist in 17 African countries; however, a large multicountry study by Lewallen et al.[39] suggested that there is no consensus among national policy makers whether this cadre is necessary or desirable, as a variety of issues caused many professionals to resign from their roles and others to be unproductive. A detailed study by Gichangi et al.[36] that looked at the successes and failure of nonphysician trichiasis surgeon programs in Kenya, Tanzania, and Malawi, where the vast majority of nonphysician surgeons work, found that they have low productivity and high attrition rates. Low productivity was also a concern raised by Courtright et al.[32] The factors associated with higher productivity include undergoing training and having an experienced trainer, quality supervision, and an adequate supply of surgical instruments.[32,34] Among optometrists, Bruce and Tatham[31] and George et al.[35] found Scottish and Singaporean optometrists to be interested in undertaking task-shifted roles. Nonetheless, inadequate training and lack of remuneration were seen as the main perceived barriers among clinicians. Task-shifted eye care providers should therefore be given adequate resources to be productive and sufficient training in order to be effective. Another program in Sierra Leone (which was considered successful) trained nonphysician surgeons and found that they quickly and safely achieved volume in desired locations, but migration to urban areas remained problematic.[53] Factors associated with practitioners' lack of retention in the most needed areas were lack of regulation, supervision, remuneration, or acceptance of the new cadre.

In one study,[33] nurses who had undertaken ophthalmology roles in Western Pacific nations were generally dissatisfied because of lack of recognition of their specialism (i.e., not valued), lack of career progression (i.e., limited prospects), and lack of salary increase (i.e., limited remuneration). Factors that improved the quality of care provided by these professionals in the Western Pacific were addressing these aspects, namely, recognition, a professional framework, and professional development. A lack of certainty over career progression and stability was also dissatisfying to task-shifted community eye care workers in Sierra Leone,[41] even though they were intrinsically motivated by a sense of helping their community. Nurses in an intravitreal injection training program in Norway[30] experienced task shifting more positively, finding that learning a new task provided a sense of pride, increased respect, and increased sense of involvement in patient care. These studies show that task shifting in eye care can be compatible with recruitment and retention when the new task provides deeper satisfaction and stability.

DISCUSSION

The evidence summarized in this review shows that task shifting has many potential benefits, including increasing access to eye care in underserved areas that it can serve as a workforce retention strategy, but that it is also associated with challenges, including restricting recruitment and retention of health care personnel. Metrics such as quality of care[36] and productivity can be equally as good in task-shifted roles,[53] which can be interpreted as evidence that task shifting has the potential to significantly reduce levels of preventable blindness. However, this is dependent on key factors being in place to ensure eye care personnel are recruited to these roles and remain in position (including being valued, career prospects, and adequate remuneration). The findings of this review can be grouped into four key areas determining the success of task shifting in eye care in underserved areas, namely, incentivizing for recruitment, training, motivation to stay, and the means of productivity.

Incentivizing

Newly qualified practitioners need to be recruited into new roles and the appropriate geographical location for the intended benefits of task shifting to occur. This review showed that incentivization has the potential to be successful for both recruitment to needed areas and for task shifting, and these incentives are both financial and nonfinancial. It was not only the prospect of earning less money for more work that demotivated clinicians, but also practical factors such as the adequacy of housing, schools, and personal safety, as well as career advancement and further learning. This is an interesting finding considering that many high- and low-income countries differ significantly in this respect. In many low-income countries, salaries in rural areas where task shifting is most needed tend to be lower; personal safety, adequacy of housing, and schooling are less predictable; and the opportunities for career development are more limited. Rural areas in many high-income countries often provide higher salaries due to market shortages, better personal safety, more affordable housing, and often opportunity for career advancement. Context is critical in incentivizing clinicians to task-shifted roles, and an analysis of any local situation must be considered when preparing policy.

Optometry students and optometrists are often motivated to consider engaging in task shifting by altruism as well as career development. The ability of health professionals to fulfill a visible need is extremely important to them, and a sense of meeting a need in their local community aligns well with both recruitment to work in needed areas and recruitment to task-shifted roles. In settings with considerable need, clinicians are more likely to be motivated to take on a task shifting role.

Training

For both recruitment or retention in needed areas and undertaking task shifting, it is important that sufficient training is given. Both the trainer and the trainee must be given the adequate time, resources, and financial compensation to produce an effective task shifting arrangement. Incentives are important to increase trainer motivation as busy workloads may cause those delivering training and supervision to resent the increased responsibility if no incentive is given. Acceptance of the new cadre is also vital, therefore the trainer should be someone who has interest in, and is accepting of, dynamic roles within eye care. Identification of resistance to the training of cadres undertaking task shifting should be addressed prior to instigation.

Training must be sufficient to give the trainee the confidence to practice independently. Inadequate training creates high stress levels when trainees feel inadequately prepared. Being confident in clinical decision-making is vital in areas where secondary care is geographically distant, and there should be robust provision of remote support via electronic communication. It is trainees themselves who often refer to lack of training as a barrier to their success and do not appear to have problems with overconfidence. Policies to increase quality of training and supervision have the potential to increase human resources for eye health and uptake of task shifting.

Motivation

After clinicians have been recruited and adequately trained, the motivation to stay both in the task-shifted role and in the needed geographical area is vital. Incentives that can be effective include

clear career progression as well as the financial rewards that reflect any increase in responsibility. This could help avoid what Okyere et al[40] describe as the demotivating perception that additional tasks are "stressful and overburdening" and instead harness the motivating perception that additional tasks are "learning new skills." The ability to prescribe medication is also vital. It reduces stress by allowing eye care professionals to meet the visible need and helps their service to be recognized and valued.

If the work environment is stressful or there is inadequate support from line managers, staff are less motivated to stay in employment. Human resource management and employee engagement are especially important to retain staff in areas where managerial relationships are more likely to be remote. This could be done by providing support for small businesses independently practicing in rural areas and incentivizing not only clinicians but also their managers. Interpersonal relationships again reflect that cultural competence is important. Both the culture of the area in which the clinician works as well as the internal culture of the organization must be a good fit for the employee to remain. Again, the motivating factors that retain eye care professionals in needed areas and the motivating factors for task shifting are complementary.

Productivity

Even if clinicians are recruited, trained adequately, and motivated to remain, low productivity is problematic even when standards of care are high. Productivity can be improved by integration into primary care, adequate supply of resources, and continuing training. Blanchet et al[68] reported that an investigation needs to be made of every health system to see how eye care can be integrated into the general health care system as only well-integrated eye care provides good productivity. Integration into general medicine, diabetic care, and cardiovascular care are important, as without these elements, detection of eye disease has only limited impact on the overall prevention of blindness. Providing adequate resources such as legal rights to prescribe for conditions actually encountered, diagnostic and therapeutic drug supply, supply of ophthalmic lenses, access to secondary care, computer-based records that can be shared easily, prescription pads, and biomedical technicians that can maintain and fix equipment are all important. As health needs change and new treatments become available, rural clinicians should not be left out of continuing education.

Motivational theory

Motivation is the core human resource management theme that affects recruitment and retention. Herzberg and colleagues' hygiene theory[69] contains two factors named hygiene and motivational factors. Hygiene factors are the elements that avoid disengagement in employees, not representing extreme sources of satisfaction but can cause extreme dissatisfaction if they are absent. Motivational factors are those that promote satisfaction. Factors from this review can be categorized into overall motivating or hygiene factors (Fig. 3). The truly motivational factors in the recruitment and retention of eye care workers include learning opportunities and career development. Both can be fulfilled by task shifting.

Hygiene factors include good professional relationships, support from management, professional recognition, and adequate resources. Task shifting does not function well if there is no recognition and respect for the new cadre of health care worker, and this in turn can affect recruitment and retention. Poor relationships between optometrists and ophthalmologists are a source of extreme dissatisfaction to both professions. Health systems should create purposeful opportunities to provide face-to-face interaction between cadres to enhance mutual respect and collaboration. Other hygiene factors include the ability to prescribe medication, adequate equipment, consumables, and salary. These factors affect both recruitment and retention and the success of task shifting.

FIGURE 3. Factors affecting recruitment and retention and task shifting in Herzberg's hygiene model. Motivational factors are those that promote satisfaction. Hygiene factors are those that are necessary to avoid disengagement, not representing extreme sources of satisfaction but can cause extreme dissatisfaction if they are absent.

CONCLUSIONS

Improving human resources for eye health has the potential to increase access to eye care in underserved areas. To improve recruitment and retention of midlevel eye care staff, they should be incentivized to take up positions in the areas that are underserved, adequately trained, motivated to remain in those positions, and given adequate resources for personal and professional fulfillment. Task shifting also requires incentivization to undertake more tasks, appropriate training and supervision, motivation to continue, and the resources to be productive. Similarities in the underlying motivation for these two strategies suggest they have the potential to be compatible and complementary, but further study should be done to explore these motivations in detail.

The main motivational factors for health workers are learning opportunities and clear career progression. Financial incentives to work in rural or underserved areas can be successful. Hygiene factors include training to cover tasks actually encountered, the legal ability to prescribe medication, adequate resources, and good relationships with other cadres and with management. Task shifting in eye care has the potential to be compatible and complementary with recruitment and retention of midlevel eye care professionals, provided these factors are considered.

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